

1 What is claimed is:

1 1. In a disk drive comprising at least one head and at least one disk having at
2 least one disk surface, each surface having a plurality of concentric zones, a method for
3 reducing a servo channel head gain calibration time during the disk drive initialization,
4 the method comprising:

5 selecting a first disk surface;

6 initiating a first servo channel head gain calibration process for a first head
7 corresponding to the selected first disk surface;

8 obtaining a first head gain calibration value for a pre-selected zone in the
9 selected first disk surface;

10 comparing the obtained first calibration value with a first pre-stored calibration
11 value for the pre-selected zone and generating a first comparison result; and
12 stopping the first calibration process for the first head if the first
13 comparison result does not exceed a threshold value.

1 2. The method of claim 1, wherein the first pre-stored calibration value is
2 obtained from a first pre-stored calibration value table.

1 3. The method of claim 1, wherein the first pre-selected zone is at a median
2 radial location between a first zone in the plurality of concentric zones located closest to
3 a center of the disk surface and a second zone in the plurality of concentric zones located
4 farthest from the center of the disk surface.

1 4. The method of claim 1, wherein the first pre-selected zone is a zone in the
2 plurality of concentric zones located closest to a center of the disk surface.

1 5. The method of claim 1, wherein the first pre-selected zone is a zone in the
2 plurality of concentric zones located farthest from a center of the disk surface.

1 6. The method of claim 1, further comprising: performing the first servo
2 channel head gain calibration process for each zone in the plurality of zones if the first
3 comparison result exceeds the threshold value.

1 7. The method of claim 1, further comprising:

2 performing the first servo channel head gain calibration process for a
3 subset comprising at least two of the plurality of zones if the first comparison
4 result exceeds the threshold value.

1 8. The method of claim 1, wherein the threshold value corresponds to a pre-
2 selected deviation of the first head gain calibration value from the first pre-stored
3 calibration value.

1 9. The method of claim 8, wherein the pre-selected deviation is a ten percent
2 deviation of the first head gain calibration value from the first pre-stored calibration value.

3 10. The method of claim 1, wherein the disk drive comprises a plurality of
4 heads and a plurality of disks each having at least one disk surface, wherein the method
5 further comprises:

6 selecting a second disk surface;

7 initiating a second servo channel head gain calibration process for a
8 second head corresponding to the selected second disk surface;

9 obtaining a second head gain calibration value for a pre-selected zone in
10 the selected second disk surface;

11 comparing the obtained second calibration value with a second pre-stored
12 calibration value for the pre-selected zone and generating a second comparison
13 result; and

14 stopping the second calibration process for the second head if the second
15 comparison result does not exceed the threshold value.

16 11. The method of claim 10, further comprising:

17 repeating the selecting, the initiating, the obtaining, the comparing and the
18 stopping for each head in the plurality of heads.